

competition among various broadband service providers will ensure that adequate signal quality is provided to the ultimate customer, thus rendering the FCC's existing signal quality standards unnecessary.^{50/} However, to the extent that the Commission decides to retain signal quality and other technical standards applicable to cable systems, those standards should be made applicable to all broadband service providers furnishing similar services. Clearly, if rules are necessary to ensure that the public receives adequate quality signals from cable television operators, such rules should also ensure that the same signal quality is received from competing video service providers.

Furthermore, to the extent that existing signal quality rules are maintained in some form, the Commission must make it clear that the service provider can only be held responsible for signal quality up to the point of demarcation. Given the fact that subscribers will have control over the home wiring and any associated non-network equipment beyond the demarcation point, the ultimate responsibility for maintaining that wiring and equipment must be borne by the customer. Cable operators and other broadband providers simply cannot be held responsible for signal quality beyond the demarcation point where the customer is free to install, repair, augment or replace its own home wiring without any safeguards to ensure that: 1) the wiring is properly installed; 2) the wiring meets proper technical specifications for the type of service for which it is to be utilized; or 3) the number of outlets installed does not exceed the capacity of the system to deliver a good quality signal at each outlet.

^{50/}NPRM at ¶ 25. Obviously, if the Commission determines that signal quality or other technical standards are unnecessary, such a determination would continue to preempt any such requirements from being imposed at the state or local level.

With respect to this last point, the FCC should take note that, as a result of its rate regulations allowing subscribers to obtain service on an unlimited number of outlets with no increase in the monthly service charge, it has become common for customers to install for themselves a number of additional outlets by tapping into the home wiring originally installed by the cable operator. Situations are not uncommon where anywhere from five to ten or more extra outlets have been added to existing wiring which was originally designed to accommodate from one to four outlets. Clearly, the cumulative effect of the signal losses from each of these additional outlets may exceed the system's original design capacity, making it unlikely that the system will meet FCC technical standards if measured at the television set connected to this newly added wiring. Where the FCC rules require cable operators to relinquish control over internal wiring to the customer, the cable operator simply cannot be held responsible for meeting FCC technical standards at any point on the customer's side of the demarcation point.

VI. CUSTOMER PREMISES EQUIPMENT

In its NPRM, the Commission observes that telephone customers can purchase, install and maintain their own customer premises equipment ("CPE") as long as it is registered under Part 68 of the Commission's Rules, and that this policy has resulted in a vigorously competitive market for telephone CPE. The Commission has invited comment on whether similar policies should be applied to "Cable CPE," which the NPRM suggests would include any equipment located on the customers' side of the demarcation point, "such as television receivers ("TVs"), video cassette recorders ("VCRs"), remote control units, and set-top

converter descramblers ("set-top boxes")."^{51/} The Commission also has invited comment on whether the rates for Cable CPE should be deregulated as are telephone CPE rates.^{52/} As will be discussed in more detail below, cable equipment which provides signal security functions cannot appropriately be classified as CPE merely because it is located in the subscriber's home. With regard to true Cable CPE, a competitive marketplace already exists which would justify the immediate deregulation of such equipment rates.

The Commission's view that all equipment located on the customer side of the demarcation point should be considered customer premises equipment appears to be based on superficial similarities between the way telephone service and cable services are provided. In fact, the network topologies and the services provided by cable systems and telephone companies differ in many critical respects which warrant differing regulatory treatment with respect to the classification of equipment as CPE. Understanding how network architectures differ between the two industries is crucial to understanding why differing regulatory approaches are required.

Telephone networks are configured into what is called a fully switched star architecture. In this configuration, a single customer has a pair of dedicated copper wires running from the local exchange carrier's central office, where the end office telephone switch is located, to the customer's premises. The only use for each pair of wires is to provide telephone service to a specific customer. No signals are present on a particular line except when that specific customer is making or receiving a call. Multiple phone lines in a particular residence require multiple dedicated pairs from the central office to the home.

^{51/}NPRM at ¶¶ 65-67.

^{52/}Id. at ¶ 75-76.

Most importantly, the routing of information over a particular phone line to a terminal device (e.g., a telephone, fax machine, computer, etc.) is controlled by the carrier's end office telephone switch, which is usually located at the carrier's central office. Switching does not occur on the customer's premises.

In contrast, cable telephone systems utilize what is often referred to as a broadband bus structure to deliver their services to customers. The broadband bus network architecture delivers the entire spectrum of digital and analog video, audio, voice, and data communications from the headend to each customer's residence. There are no dedicated lines containing information routed only to one specific customer. The broadband system is constantly transmitting information over the entire system and often over the entire activated bandwidth capacity of the system regardless of whether or not a particular customer is accessing the network at any particular time and regardless of whether or not a particular customer is authorized to receive a particular service or group of services.

Selection of the desired program or reception of data intended for a specific cable system user is accomplished via an intelligent terminal device provided in the customer's home. The cable headend constantly polls each of the intelligent terminals connected to the network to ensure that each terminal receives only the specific information intended for that particular customer. The occurrence of switching and program selection at both the headend and in the home terminal is often referred to as "distributed switching." This is in contrast to the telephone network where the central office switch is the sole provider of this function. It is precisely because certain cable television system terminal equipment, although located on the customer's premises, provides switching and signal security features, that the

telephone practice of classifying all equipment located on the customer's premises as deregulated CPE cannot be applied to the cable industry.

In a cable system, it is the television set or videocassette recorder and any associated remote control unit that are the functional equivalents of the telephone. The remote control device instructs the tuner inside (or, where a converter is utilized, on top of) the television to select the channels which the viewer chooses to watch, much the same way as the telephone key pad enters the phone number of the person with whom the caller wishes to speak. The TV set converts the electronic signals into an intelligible picture much the same way as the phone converts electronic impulses into sound. The addressable set top converter, on the other hand, is different from other equipment on the customer's side of the demarcation point because it provides switching and signal security functions more analogous to telephone central office equipment than the actual telephone.

To the extent that the Commission desires to apply a telephone-like regulatory model to the cable industry, it must ensure that only equipment which is directly analogous to telephone CPE be regulated as Cable CPE. To this end, the Commission must recognize that home terminal equipment supplied by the cable operator which provides switching and security functions in a distributed broadband switched network should not be classified as CPE. There are several good reasons for this.

First, since the network equipment, including the intelligent home terminal, must function to listen to common broadcast information, the cable operator must have the flexibility to upgrade these elements as deemed necessary to remain state-of-the-art. For example, imagine what the telephone network would have been like if customers owned the line cards in the phone switch that serve them and the network could not be upgraded until

all customers were willing to purchase newer models. Under such an archaic scenario, services such as call forwarding, return call, call waiting and the like would have been impossible.

Second, the switching function of the intelligent home terminal is the key to providing signal security and conditional access by preventing unauthorized access to communications not intended for a particular viewer or user. The FCC cannot simply mandate that proprietary security systems be manufactured and made available for sale to the general public without making the already difficult task of preventing signal piracy virtually impossible.^{53/} The FCC itself has recognized the critical role that intelligent home terminals serve in ensuring network security and has even issued notices to the public warning them against purchasing illegal "black box" decoders to receive cable service.^{54/} The increasing number of arrests and prosecutions for the manufacture and sale of illegal decoders further underscores the ongoing importance of maintaining control over the production and distribution of devices needed to ensure network security. Clearly, the FCC should not take any action which would hamper ongoing efforts to eradicate signal piracy.

^{53/}The FCC must be well aware of the growing threat to public safety caused by the hijacking and theft of large numbers of legally manufactured decoders by criminal elements desiring to modify and resell that equipment on the black market. See, e.g., "Pirates Growing More Brazen - And Violent," Multichannel News (February 20, 1995) at 3; "Cable Thieves Undaunted by New Technology," Broadcasting & Cable (July 10, 1995) at 36. Clearly, unscrupulous pirates, not the consumer, would be the beneficiary of any regulation that would weaken existing control over the manufacture and distribution of security equipment. According to a 1992 study undertaken by the National Cable Television Association, signal theft costs the cable industry approximately \$4.7 billion annually (source: NCTA Office of Cable Signal Theft).

^{54/}"Modified Cable Converter-Decoders," FCC Public Notice (released November 3, 1994). See also, First Report and Order, ET Docket No. 93-7, 9 FCC Rcd 1981 (1994) at ¶¶ 29, 72.

Third, to the extent that the Commission wishes to undertake an inquiry into the desirability of making home terminal equipment that performs network functions available for purchase directly by consumers, such an inquiry can only be undertaken pursuant to the guidelines established by Sections 301 and 304 of the Telecommunications Act of 1996. Section 301 of the Telecommunications Act of 1996 amends Section 624A of the 1992 Cable Act to direct the Commission, in promulgating equipment compatibility regulations to consider the "need to maximize open competition in the market for all features ... of converter boxes and other cable converters unrelated to the descrambling or decryption of cable television signals."^{55/} Likewise, Section 304 of the Telecommunications Act of 1996 expressly provides that: 1) any FCC actions to require the commercial availability of equipment used to access services provided by multichannel video program distributors can only be taken in consultation with the appropriate industry standard-setting organizations; and 2) any such requirements may not jeopardize the security of multichannel video programming and other services or impede the legal rights of service providers to prevent theft of their services.^{56/} Indeed, the fact that the Senate expressly rejected an amendment which would have legalized the retail sale of descrambling equipment clearly indicates that the Commission would grossly overstep the bounds of its authority by taking any action to treat cable security equipment in a manner similar to telephone CPE.^{57/} At the very least, any

^{55/}Telecommunications Act of 1996 at Sec. 301(f)(2)(B) (emphasis supplied).

^{56/}Telecommunications Act of 1996 at Sec. 304.

^{57/}See 141 Cong. Rec. S 7993-95 (daily ed. June 8, 1995). Senator Pressler's statements included:

(continued...)

attempt to classify intelligent home terminals as customer premises equipment with an eye toward mandating the commercial availability of such terminals is beyond the scope of this proceeding.

In contrast to intelligent home terminals, true cable CPE includes equipment such as internal wiring, remote control devices, A/B switches and tuner-only converters. True cable CPE has long been and continues to be readily available from competitive sources and should not be subject to rate regulation at any level. For example, tuner-only converters which are provided to expand the tuning capacity of a non-cable ready TV set or VCR, or which are provided to protect against direct pick-up interference on an older model set, are readily available on a competitive basis from hardware stores and consumer electronics retail outlets. Where the customer is free to select and purchase a converter from a number of independent and unaffiliated retail outlets and to use that equipment to receive authorized cable services,

^{57/}(...continued)

Telephone architecture and cable architecture are radically different. The telephone instrument itself does not grant consumers access to the services being sold by the telephone company. The telephone set is merely the instrument that consumers need to use the service. Access to telephone services is provided by a line that connects consumers to the telephone company's central office. In order to prevent consumers from using a service, . . . the telephone company physically disconnects the consumer's wire at the central office. Consumers cannot steal the service.

Cable operators scramble or encrypt signals to prevent their unauthorized reception. Access to an encrypted product which is present in every home is given only to consumers who have purchased it by providing a set-top box containing the appropriate descrambling circuitry.

there exists no justification for regulating the rates of any such units made available for purchase or lease by the cable operator.

Similarly, in light of the fact that the Commission's equipment compatibility rules prohibit cable operators from disabling or in any way interfering with the ability of customers to utilize their own remote control unit with the set-top converter or home terminal supplied by the cable operator, there exists no justification whatsoever for regulating the sale or lease rates charged by cable operators for such remote control devices. There are literally dozens of models of universal remote controls that can be purchased at low cost from numerous retail outlets. Indeed, that a robust competitive market has developed for such equipment is clearly demonstrated by the fact that the price of such units has plummeted from approximately \$100.00 per unit when they were first introduced several years ago to less than \$10.00 each per unit today. Clearly, cable operators possess no monopoly power in the provision of such equipment which would warrant continued rate regulation thereof.

Under certain circumstances, the rates charged for the installation and maintenance of cable home wiring should also be deregulated. The rates to install home wiring should be deregulated where three conditions are met. First, the cable operator would be required to clearly provide consumers with the option of having the internal wiring installed by a third party. Second, the cable operator would be required to provide the applicable technical specifications to the customer to ensure that any home wiring which the customer chooses to install would be compatible with the network. Third, the cable operator would be required to turn over ownership of the home wiring to the customer immediately upon installation rather than at termination of service as is currently provided in the Commission's rules. Under these conditions, customers would always have a choice regarding the installation of

home wiring and this choice should be sufficient to prevent cable operators from charging unreasonably high installation rates.^{58/}

For the same reason, cable operators should be able to offer wire maintenance contracts at an unregulated rate in cases where the operator either provides consumers with the option of having internal wiring maintained by third parties or where the operator provides consumers with the option of having the cable operator provide such maintenance on a per-visit basis at its regulated hourly service charge. When either of these conditions are met, consumers will have sufficient choices to constrain the ability of cable operators to charge unreasonably high prices for their own wire maintenance contracts. As indicated above, the Commission has already recognized in the context of its rules governing new product tiers that the existence of consumer choice is sufficient to prevent rates from becoming unreasonable. The Commission's NPT decision is even more compelling with respect to wire maintenance contracts since that decision recognizes that choice available not only from a marketplace alternative but also from regulated services provided by a cable operator can be sufficient to act as a check on a cable operator's ability to charge unreasonable rates.^{59/} The principle enunciated in the NPT Order applies equally to rates for regulated equipment and should allow cable operators to offer maintenance contracts to subscribers at unregulated rates as long as the conditions preventing cable operators from charging unreasonably high rates for such maintenance contracts are met. Indeed, the

^{58/}See, e.g., Sixth Order on Reconsideration, Fifth Report and Order and Seventh Notice of Proposed Rulemaking, MM Docket Nos. 92-266, 93-215, 10 FCC Rcd 1226 (1994) ("NPT Order") at ¶¶ 16-24 (Consumer choice justifying the provision of new product tiers at unregulated rates).

^{59/}Id.

Commission has already applied this principle to regulated equipment when it decided that there is "no need for the Commission to regulate the sale of equipment where comparable equipment is available from operators on a leased -- and regulated -- basis."^{60/}

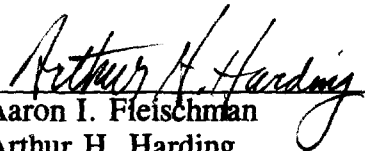
VII. CONCLUSION

Accordingly, the Commission's rules and policies relating to broadband and narrowband inside wiring should conform to the principles set forth in the foregoing comments.

Respectfully submitted,

TIME WARNER CABLE
TIME WARNER COMMUNICATIONS

By:



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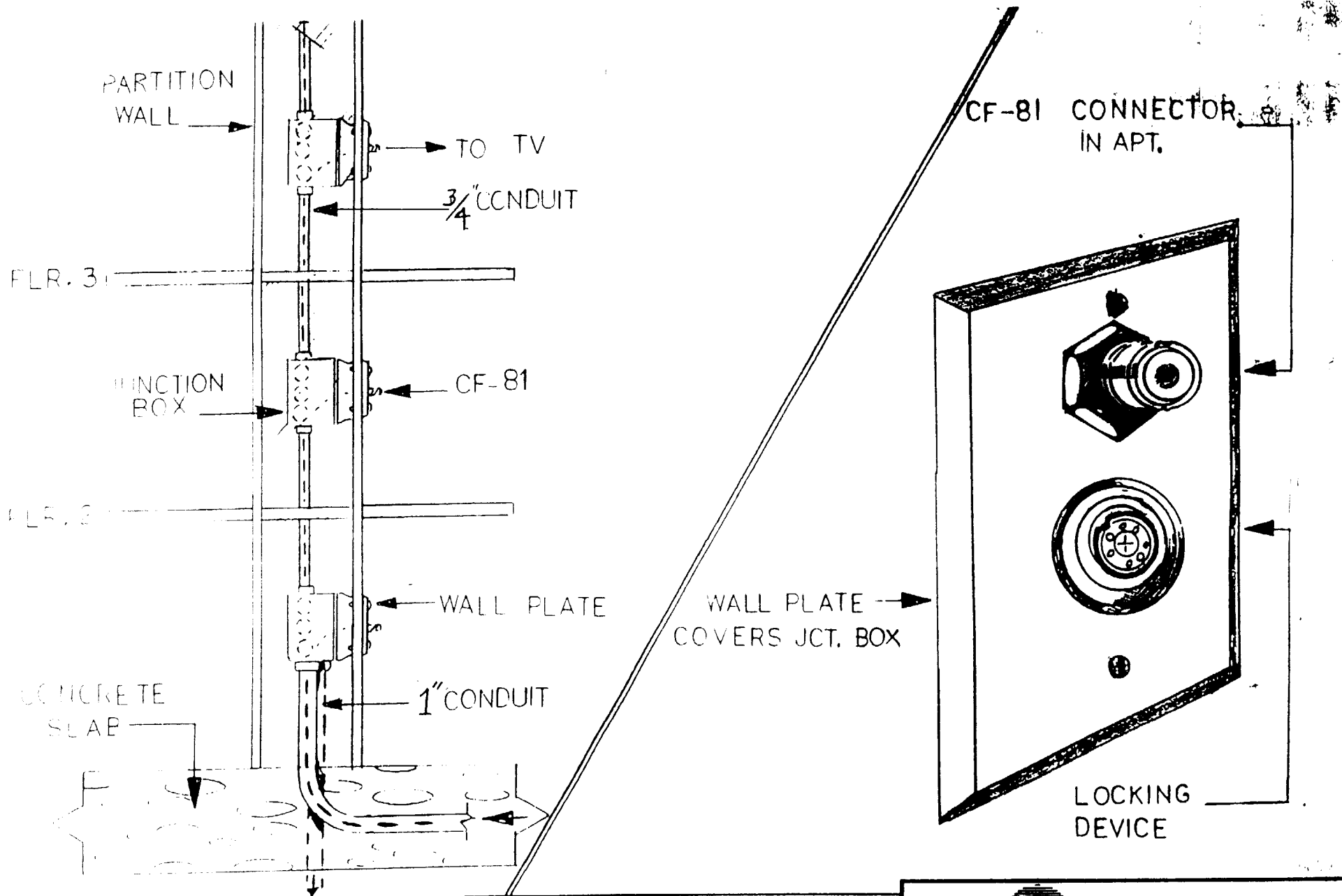
Their Attorneys

Dated: March 18, 1996

37263.1

^{60/}First Order on Reconsideration, Second Report and Order and Third Notice of Proposed Rulemaking, MM Docket No. 92-266, 9 FCC Rcd 1164 (1993) at ¶ 51.

EXHIBIT A

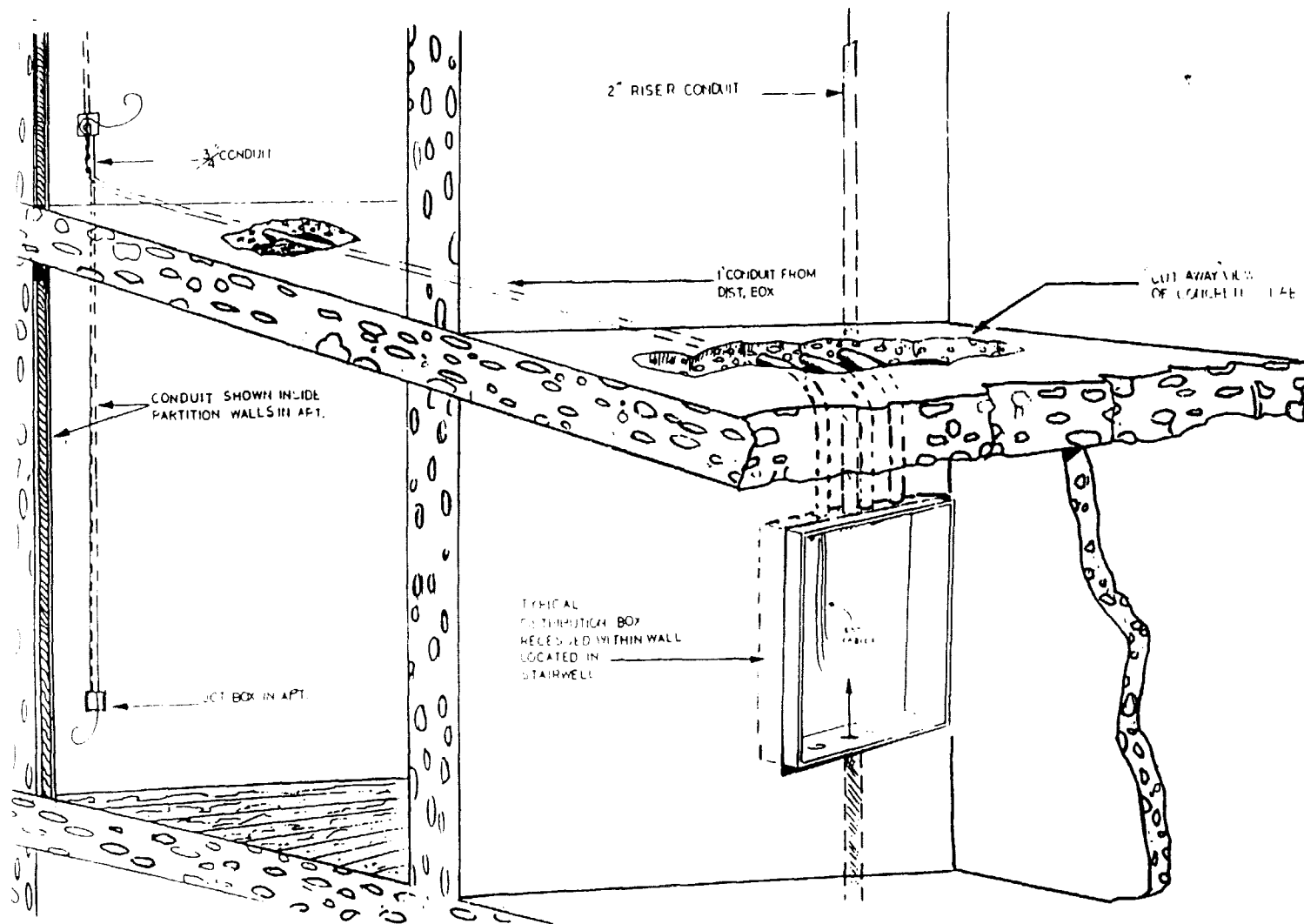


SYSTEM DESIGN SYMBOLS

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500' CABLE		2 WAY TRUNK-BRDG ALC		2 WAY LINE EXTENDER		3 WAY SPLITTER
750' CABLE		2 WAY TRUNK		POWER SUPPLY & COUPLER		DIRECTIONAL COUPLER
1000' CABLE		2 WAY TRUNK BRDG W/ALC		IN LINE EQUALIZER		TAP 2 WAY
				TERMINATION		TAP 4 WAY
						TAP 8 WAY

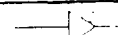
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DATE 11-3-93	SCALE	DRAWN BY PAGE, F		DWG. NO. 3	

EXHIBIT B



SYSTEM DESIGN SYMBOLS

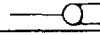
412 CABLE



TRUNK BRIDGING



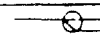
LINE EXTENDER



2 WAY LINE EXTENDER



POWER SUPPLY & COUPLER



IN LINE EQUALIZER



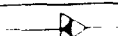
TERMINATION

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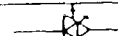
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ALC

750 CABLE



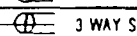
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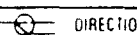


2 WAY TRUNK BRDG
W/ALC

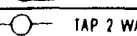
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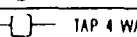
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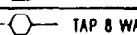
DIRECTIONAL COUPLER



TAP 2 WAY



TAP 4 WAY



TAP 8 WAY



PARAGON

CABLE

MANHATTAN

PROJECT NO

BLOCK

LOT

TITLE

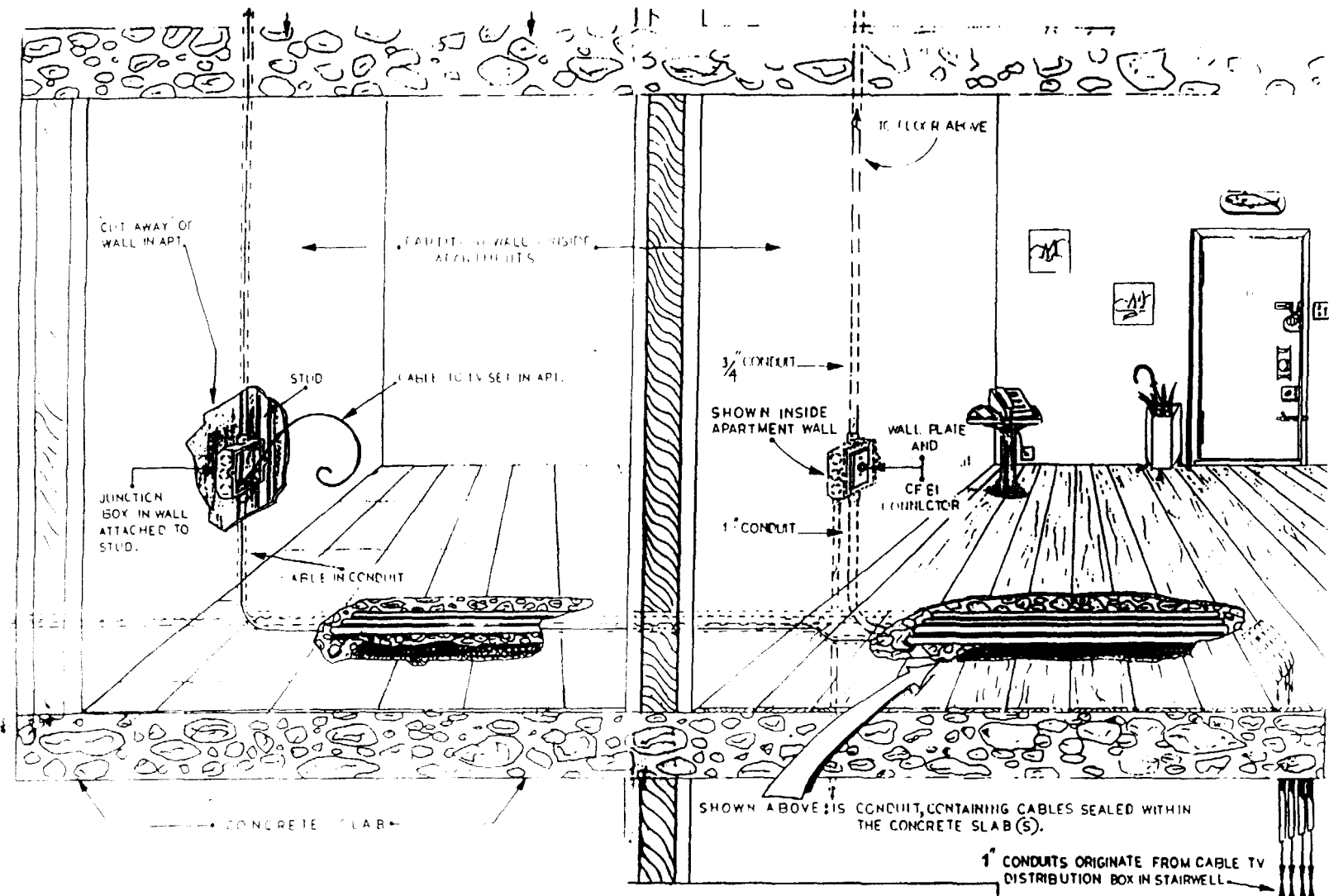
DATE

SCALE

DRAWN BY

DWG. NO

EXHIBIT C



SYSTEM DESIGN SYMBOLS

412" CABLE		TRUNK BRIDGING		LINE EXTENDER		2 WAY SPLITTER
1000" CABLE		2 WAY TRUNK BRDG ALC		2 WAY LINE EXTENDER		3 WAY SPLITTER
750" CABLE		2 WAY TRUNK		POWER SUPPLY & COUPLER		DIRECTIONAL COUPLER
1000" CABLE		2 WAY TRUNK BRDG W/ALC		IN LINE EQUALIZER		TAP 2 WAY
				TERMINATION		TAP 4 WAY
						TAP 8 WAY



PARAGON
CABLE
MANHATTAN

PROJECT NO	BLOCK	LOT
TITLE		
DATE	SCALE	DRAWN BY
		DWG. NO

EXHIBIT D



575 Madison Avenue, New York, New York 10022
(212) 891-7777 Fax (212) 891-7214

December 30, 1994

Liberate Your Shareholders From the Cable Monopoly!

Dear Board President:

A number of your shareholders — in search of better cable TV at better prices — have enthusiastically responded to our November 13th postcard campaign in the *New York Times*.

Isn't it time you switched to Liberty Cable? We deliver 55 channels of Basic service at bulk rates that are 30%-50% less than what you pay now. And, our Basic line-up includes channels you won't find anywhere else... like **Turner Classic Movies** and **Bloomberg Direct**. Starting January 1, 1995, we will be the first to launch **CNN International**, a 24-hour global news network. Even better, you'll find we provide superb picture quality and responsive, professional customer service.

These are only a few reasons why over 130 Manhattan co-ops and condos have already chosen the Liberty Cable advantage.

I would be happy to give a brief, ten minute presentation describing the Liberty Cable program at your next Board meeting. Simply contact us at (212) 891-7786 to arrange a time convenient for your group.

Welcome to the revolution!

Sincerely,

A handwritten signature in dark ink, appearing to read "Jennifer M. Walden".

Jennifer M. Walden
Account Executive

We take great care to ensure the transition to Liberty Cable is virtually transparent to your building residents. The entire installation process is non-intrusive and requires minimum construction. Typically, we install a parallel system that coexists with that of your present system.

The Nuts and Bolts

First, at our cost, we install a three-foot Plexiglas rooftop receiving antenna dish. This lightweight and environmentally clean antenna can be mounted on a tripod or attached to the water tank tower or elevator room to screen it from public view. The antenna is then connected to your existing pathway of vertical wires to each floor.



Second, we install a vertical wire parallel to that of the monopoly. In pre-war structures, this vertical wire is usually enclosed in conduit along the exterior of the building. In post-war buildings, it is often either spliced into the master antenna system or installed in conduit in the stairwells. This new wiring takes just days to install, is invisible to residents, and does not interfere with any existing electrical or cable service.



Finally, we connect the new vertical wire to each apartment using existing pathways. No new wiring is required within each apartment, so that built-ins and custom carpentry remain perfectly intact.

Announcing Liberty Cable to Your Residents

Our Marketing and Customer Service staff will work closely with you to announce the installation of our service. With your approval, we will send a general notice two weeks before each apartment is installed to welcome your building's subscribers to Liberty Cable and to describe the installation process.

